

GENERAL INFORMATION

1.1. Product description

The following is the list of the features available on the version TS1E1 of the product “The Slate” sold by ISKN:

- Localization of a magnet embedded in a passive object (such as a pen) above the product
- Identification of the localized object thanks to the magnet
- Bluetooth Low Energy communication
- USB 2.0 communication
- Record of data into the embedded flash memory and/or SD card
- Battery and/or USB power supply
- The product embeds also an accelerometer

1.2. Tested System Details

Power supply:

EUT is supplied by battery with or without load.

For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply & Communication	<input type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input type="checkbox"/> Battery	5VDC - USB	-	-
Supply2	<input type="checkbox"/> AC <input type="checkbox"/> DC <input checked="" type="checkbox"/> Battery	3.7VDC	-	Lithium-ion

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply & Communication	USB cable	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-

Auxiliary equipment used during test:

Type	FCC Id	Reference	Sn	Comments
Laptop	Latitude E6420	-	DELL	Laptop
Power supply for laptop	ADP-90LD B	DELL P/N: MK947	DELL	Power supply for laptop

Equipment information:

Type:	Bluetooth Low Energy v4.0			
Frequency band:	[2400 – 2483.5] MHz			
Sub-band REC7003:	Annex 3 (a)			
Spectrum Modulation:	<input checked="" type="checkbox"/> DSSS (Tested like it)			
Number of Channel:	40			
Spacing channel:	2MHz			
Channel bandwidth:	1MHz			
Transmit chains:	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
	<input checked="" type="checkbox"/> Single antenna		<input type="checkbox"/> Symmetrical	
	Gain 1: dBi	Gain 2: dBi	Gain 3: dBi	Gain 4: dBi
Beam forming gain:	<input type="checkbox"/> Yes: dB		<input checked="" type="checkbox"/> No	
Receiver chains	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Type of equipment:	<input checked="" type="checkbox"/> Stand-alone		<input type="checkbox"/> Plug-in	<input type="checkbox"/> Combined
Ad-Hoc mode:	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
Adaptivity mode:	<input type="checkbox"/> Yes (Load Based)		<input type="checkbox"/> Off mode	
	Clear Channel Assessment Time:			<input checked="" type="checkbox"/> No
	q value for Load Based Equipment:			None
Duty cycle:	<input checked="" type="checkbox"/> Continuous duty		<input type="checkbox"/> Intermittent duty	<input type="checkbox"/> Continuous operation
Equipment type:	<input type="checkbox"/> Production model		<input checked="" type="checkbox"/> Prototype	

CHANNEL PLAN			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
Cmin: 0	2402	Cmid: 20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	Cmax: 39	2480

DATA RATE		
Data Rate (Mbps)	Modulation Type	Worst Case Modulation
1	GFSK	<input checked="" type="checkbox"/>

The EUT is set in the following modes during tests with simulator / software: (Certif_USB_noPos/V0.3.5)
- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- The power of Bluetooth chip is set at 1.7dBm.

They are 2 tests configurations tested in Radiated emission data:
- In USB mode, control by Laptop (by software: Certif_USB_noPos/V0.3.5) of Bluetooth emission (carrier, modulation and power).
- In Radio Frequency mode (communication by Bluetooth between laptop and EUT)
For these others tests, only the test in USB mode is performed.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart C.

Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.4. Test facility

Tests have been performed on From July 11th to 30th, 2014.

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2003 in a letter dated March 25th, 2008 (registration number 94821). This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.